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ABSTRACT

Planning an expedition, particularly an expedition to climb Mount McKinley, can appear monumental. Not only must the obvious items like food, equipment and personnel be carefully planned, but attention must also focus on "insignificant" items like applications and reservations which, if forgotten, could mean the difference between a successful or unsuccessful expedition. Climbing partners should be selected for their skill, dependability, compatability and reliability. Practice climbs beforehand will help the group learn to function as a team and test new clothing and equipment. Team members should contribute to expenses from the very first; with money actually invested, people are less likely to back out at the last moment. Both physical and mental conditioning should be undertaken before the trip; embarking on an expedition in poor physical condition is a miserable way to get in shape and a dangerous one, too. Food planning must take into account such considerations as that at high altitudes it takes more fuel and time to cook foods, the body tends to dehydrate, and the metabolism loses its ability to fully utilize fats. Food should never be packed in the same bag with fuel; strange new flavors may result. Other areas for expedition planning discussed in this paper include equipment and clothing needs, climbing strategy and tactics, and collection of equipment and packing. Additional information sources on expedition planning, mental conditioning, medical information and routes are also given. (DS)

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EXPEDITION PLANNING

by

Alan Ewert

(1977)

RC 011391

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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To the potential expedition leader the task of "expedition planning" can appear monumental. Not only must all the obvious items like food, equipment, and personnel be carefully selected, but seemingly insignificant items like applications and reservations can often spell the difference between a successful or unsuccessful expedition.

To further compound the problem, current literature does not often address the "nuts" and "bolts" of planning for an expedition.

This article has been written in an attempt to aid future expedition planners with the planning monster. The examples and ideas were primarily the ones used on a recent expedition to Mt. McKinley, Alaska. The expedition included a traverse, and climbing to both the South and North Summits. For clarity, the major parts involved in planning are subtitled and explained.

THE CONCEPT AND SELLING THE IDEA

Being the highest mountain in North America, yet not being technically overwhelming, the concept of a Mt. McKinley expedition is easy to formulate. Unfortunately, from here the work begins. Some guidelines to follow when planning your expedition would be:

1. Is it feasible - cost wise
   time wise
   resource wise

   How much time, money, and resources will you and the members of your team have to come up with?
2. What would you like to do - Will the expedition be a backpacking trip with climbing as a sidelight or will it be strictly climbing.
3. As the promoter of the idea, is it a pipedream or will you actually be willing to push it through? Expedition planning

can be tedious, time consuming and expensive.

4. Since you are the idea man, once you have the idea, you have to sell it. But before the selling you have to choose some people to sell it to. Realistically, the people you have on your expedition will be the biggest asset or greatest headache. When choosing the potential buyers of your plan consider these guidelines:

   A. Evaluate the type of trip, length, and cost. These three factors will help narrow the field of candidates, (hopefully not to zero).

   B. Dependability. If you expect to be placing lives in each others hands, be sure that person is someone you can <u>trust</u>. Generally this feeling or sense is cultivated by 3 factors.

      1. Past association, such as climbing partners or friends.
      2. Reputation, past climbing or expedition record
      3. Personal recommendations

   In our case, out of the four team members, three were climbing partners and one was a personal recommendation, A big responsibility for the person who does the recommending, particularly if the one recommended doesn't live up to expectations.

   Through hindsight, of the three ways to choose people,

number 3 (personal recommendation) is probably the most undependable, with number 1 (past association), being the most reliable.

If you have been in a tight spot with someone before you probably have a good idea what he will do in another similar situation.

A note of caution to the person doing the selection - friendship may not be the best method of selecting expedition members, since it tends to cloud judgement and causes one to overlook his friend's critical shortcomings - such as a repeated history of H.A.P.E. and you are going to climb a 22,000 foot peak.

C. Compatability - Is this person one you would not mind being cooped up in a tent with. Does he have a sense of humor, comradship, or any other qualities you like in a person.

Before selecting our final expedition members, we made it a point to climb with each other. Pre-expedition trips or climbs are an excellent way to "get to know" a potential partner besides giving the group a chance to become a "team".

D. Reliability - Expedition ideas usually get wide support and enthusiasm when first brought up.

Unfortunately, as time goes on the enthusiasm can wane. You - as the expedition planner, will need to get commitment, from the prospective members.

There are different ways of getting this commitment. On our expedition, prospective members had to do the following:

1. Verbally say they are going, no "maybes" or "I think so's".
2. Everyone had to make an initial downpayment of $100.00 for food, equipment, etc.
3. An initial equipment list and cost estimation was given so everyone knew what they had to get, and how much money the trip would cost.
4. Dates were established so that team members could plan on how much time they would need and when.
5. Everyone was involved in planning with bi-weekly meetings. This can be as informal as in the local pub - but do not underestimate its importance - everyone needs to be involved, informed, and made a part of the expedition.
6. Several climbs were done by the team members prior to the expedition. This was not only for training purposes, but also to make the

people a team with each of us knowing and trusting the other. It does not have to be climbing together, although this is probably the best way to prepare for a climbing expedition, but doing things as a group and not a pack of individuals.

7. An expedition fund was set specifically to pay for phone bills, stamps, and things used to communicate with each other. Looking back, I would have expanded this, if possible, to help pay for beer and pizza, and other things done as a group.

   Realistically, not everyone can fly in for meeting night but as the planner, pay particular attention to keeping these people informed and able to give input to avoid the expedition becoming a split team - the ones doing the deciding,and the ones being decided upon.

8. Financially, team members were required to make periodic deposits in the expedition fund for purchasing group items like food. This expedition fund can be held by one person or in a separate checking account. A word to the wise, keep accurate records as to what was paid in, and spent.

The point to these activities is based on the idea that if a person has to make a decision, put out some time, money, energy, and commitment, he will be less likely to back out later on. Other ways work as well as the ones listed - the important thing is to get a commitment.

Once you have taken care of the people problem, the other areas of Expedition planning can be attended to. Keep in mind that people are your most important product. You can usually get good gear, food, and transportation but not always people suitable for the expedition you have planned.

PHYSICAL CONDITIONING

The type of trip will determine the physical and mental training needed. In our case physical conditioning centered around developing the cardiovascular system and leg muscles. For ideas, we consulted the following sources:

1. The New Aerobics, Kenneth Cooper, M.D. , M.P.H., Bantam Books 1970.
2. Outdoorsman's Fitness and Medical Guide, Lawrence Galton, Harper and Row, 1966.
3. "Cardio Vascular Adjustments of Physical Conditioning", A lecture given by Loring B. Rowell during the Mountain Medicine Symposium, in Issaquah, Washington, 1976.
4. "Rx for Mountaineering", by John O'Shea, Off Belay magazine.

Conditioning techniques used were weight lifting (bench press, military press, chin-ups, push-ups, squats), bicycling, running (4 miles every other day - 2 miles on off days), and climbing or hiking.

It may be helpful to emphasize the "pay now or pay later" idea for conditioning, since many of us find exercising boring and time-consuming. "Paying later" by going on an expedition in poor physical condition is at best a hell of a way to get into shape and certainly not a safe one.

MENTAL CONDITIONING

Often overlooked but equally important to physical condition is mental conditioning. A thirty day expedition can not only be physically demanding but a mentally draining experience. The question is, how can people prepare for the rigors and trials of an expedition while still home. We tried to solve his problem in two ways - reading and experiencing.

Adventure stories featuring accounts of other expeditions are a good way to get your mind attune to what an expedition means and is. Besides, after reading Endurance, the account of the Shackleton Expedition in the early 1900's,it is easier to say things are not so tough as the going gets worse. Some suggestions for reading would be:

1. Annapurna, Maurice Herzog, E. P. Dutton and Company, 1953.
2. Four Against Everest, Woodrow Wilson Sayre, Prentice Hall, 1964.
3. The Ascent of Denali, Hudson Stuck, Snohomish Publishing Co., 1977.
4. Mountain of Storms, Andrew Harvard and Todd Thompson, Chelsea House, New York University Press, 1974.
5. Americans on Everest, James Ramsey Ullman, J.B. Lippincott Company , 1964.

6. The Wilderness Handbook, Paul Petzoldt, W.W. Norton & Co. Inc. 1974. Gives an overall view of expedition planning and group behavior.

On the experience side of mental conditioning, we tried to duplicate the situations we expected to encounter on Mt. Mckinley, through various climbs of Mt. Rainier, and Mt. St. Helens. Some of these situations included hauling sleds, building igloos and snow caves, installing and using fixed ropes, and trying out the equipment and clothing (like vapor barrier boots), we planned to use. Besides taking the "newness" out of our equipment and group interaction, these pre-climbs gave us a more realistic outlook on what our expedition was going to entail. It is much easier to know what being cold and tired entails when you have been cold and tired, than sitting back in the chair trying to imagine it.

FOOD PLANNING

The type and amount of food required and wanted on an expedition is of primary importance. Expeditions, like armies, often run on their stomachs. We divided our food into four categories:

1. Weight
2. Bulk
3. Spoilage
4. High fuel requirements

Since our plans called for a traverse of McKinley, everything would have to be carried up and over, without the use of lower caches. Since finances or appetite would not allow for totally using freeze dried foods, some discretion had to be used. The following figure shows how our food types were divided.

Types of Foods	Transportation Phase	Base Camp Low Altitude	High Altitude 14000ft. plus	Descent
	Heavy (cans)		Lightweight	
	Spoilage Risk (meats)	Medium Weight	Low Fuel Requirement	
	Bulky	Bulky	Easy to Digest	Lightweight
	Complex Cooking	Medium Fuel Requirement	Simple to Cook	Low Fuel Requirement
	High Fuel Requirement		High in Liquid Content (soups)	

FIGURE 1.

Because the human body loses its ability to fully utilize fats at higher altitudes[1], we tried to exclude fatty, rich foods at high elevations (16,000 ft. +). The higher elevations also meant longer cooking times. The less fuel and time needed to cook a meal the better. In summary, during the transportation phase, meals can be bulky, require refrigiration, canned, and high in fuel requirements. As altitude increases some common

As Altitude Increases	Problem	Solutions
	More Fuel and Time Needed to Cook	Simplify Meals-One Pot Items
	Colder	Avoid Elaborate,Gloves Off Meals
	Metabolism Upsets	Avoid Fatty, Rich,Hard to Digest Foods
	Dehydration	Use Soups and Foods Using Water

FIGURE 2.

problems and solutions are shown in figure 2.

Other considerations in food planning were; how much, (calories, nutritional requirements), what kind of food, cost, and food preferences, likes, dislikes, and allergies). I am allergic to milk so the menu reflected a lower amount of milk items.

As the expedition planner, determine what foods are liked and disliked. This requirement becomes increasingly important as the length of the expedition increases. The circulation of a proposed menu may prove helpful.

In planning our food requirements we used a 5500 calories /day/ person ratio with a total of 120 meals at $1.25 each. This number of calories proved to be extravagant with a more realistic number of calories being 4,500. To compute food composition we utilized the "Composition of Foods", Agriculture Handbook, #8, U.S.D.A., 1963. Another valuable source of information for food planning, was N.O.L.S. Cookery, by Nancy Pallister, Editor.

When "buying time" came, the group worked as a unit, with one person directing the operation. A prior arrangement was made with a local supermarket to give us a 20% discount. A master food list was prepared with the following categories:

Item	Amount	Cost	Checked if Acquired
Tea	30 bags	$2.00	✓

After the food was bought, the group re-packaged everything to reduce weight, bulk, and help lessen the garbage problem. Double plastic bags were used with knots tied at the top instead of tie-tabs. A word of caution - Do not tie tight knots since in the cold they become extremely difficult and time consuming to untie. The food was then placed in bags

in accordance to how and when they would be used. The K-Mart nylon duffel bag, ($5.95) proved to be effective for our expedition, as long as it was adequately labeled.

As a final note on food planning, two ideas come to mind. First, try to include foods that people like and it might be worth considering having various "treats" along the way. Often, these "treats" can celebrate a summit or help alleviate the depression when the summit was someplace where your group was not.

Secondly, keep in mind, that your body needs fats, proteins, carbohydrates, vitamins, minerals, and water. Little gimmicks like flavoring water so people want to drink it, thereby offsetting the expedition destroying effects of dehydration,or carrying vitamin pills have proved effective. On our expedition, we ran out of fats 3 days before getting back to civilization and I noticed my body had a craving for fats for weeks afterwards.

EQUIPMENT AND CLOTHING

Equipment needs to be selected with several factors in mind. These factors are: durability, adaptability, and cost. All of the equipment and clothing that will be used on an expedition should be pre-tested before the expedition. Here is where the pre-climbs come in handy. Problems like hauling sleds or setting up tents in the wind can all be ironed out before you get to the real thing.

We tried to make our equipment and clothing as adaptable as possible. By adaptable it is meant, the ability to use parts from one piece of equipment, for or to fix another. In our group we had 2 Kelty's and

two D-2 Jansports. Hence, parts from one similar pack could fix another. Stoves used were one M.S.R. with a backup and an optimus 111-B. The 111-B was thrown in at the last minute and proved superior in handling and dependability over the M.S.R.

For the most part, it is becoming increasingly difficult for an expedition to get equipment, or clothing donated. However, many dealers seem willing to provide a discount on items purchased. We sent a mimeographed form letter to various dealers and did get up to 40% discounts. It may be well worth the extra time and effort to write a personal letter to each potential donater instead of a xeroxed or mimeographed form.

Cost and durability, while not always, do seem to be related. For long, remote expeditions a simple rule to follow would be, "Get the best equipment you can afford, and take care of it". Be especially watchful during the transportation phase. Airlines, buses, trains, and your gear, food, and clothing are well worth the time and expense. We had good luck with metal flour containers, purchased at local supermarkets for 1.00 a piece.

The following equipment lists were compiled by our assistant leader, Richard VanWinkle, and provided guidelines for what to take and what to leave home. Keep in mind these are general lists with many items not usually taken on an expedition, but nevertheless worth thinking about.

One final note on equipment - the medical kit. While many expeditions are fortunate enough to have a physician along, ours was not. Consequently, we tried to get as much medical training as possible (E.M.T., Mountain Second-Aids class, C.P.R., etc.) We also made sure everyone knew what was in the group medical kit, how to use it, and where it was located.

At the beginning of our expedition planning, a personal information sheet was given to each participant asking for such things as any current medications, known allergies, current immunizations, and special medical problems. Also asked was whether the person had insurance coverage and what kind. Evacuation insurance was looked into but proved quite expensive or impossible to get. Some suggested reading would be:

1. Medicine for Mountaineering, James A. Wilkerson, M.D., Craftsman and Met Press, 1967.
2. Advanced First Aid For All Outdoors, Peter F. Eastman, M.D., Cornell Maritime Press, Inc., 1976.
3. Mountaineering First Aid, Dick Mitchell, The Mountaineers, Seattle, Washington, 1973.
4. Medical Care For Mountain Climbers, Peter Steele, William Heinenmann Medical Books Ltd, London, 1976.
5. Emergency Care and Transportation of the Sick and Injured, Orthopaedic Surgeons, George Banta Company, Inc., 1971.
6. Being Your Own Wilderness Doctor, Dr. E. Russel Kodet and Bradford Angier, Simon & Schuster, Inc., 1972.

STRATEGY AND TACTICS

Tactics and expedition strategy involve the combining of resources, personnel, knowledge, and the environment in the best combination to achieve the expedition's goals. Some factors to consider when planning expedition tactics are:

1. Strengths - What are the strong points of the expedition such as experience, climbing ability, or physical ability.

2. Weaknesses - What are the expedition's weak points, such as unfamiliarity with terrain or lack of prior training.

3. Environmental conditions - Predictable environmental phenomenon such as rain shadow, afternoon thunder storms, monsoon season, prevailing winds, or type of ground terrain.

After determining the realities of your group and the area you are going in the next logical step is to plan your itinerary and route. The itinerary should take into account rest days, time to acclimatize, good areas for shelter and a reasonable amount of time to go a given distance. Concurrent with the expedition itinerary are the expedition goals or objectives. on our expedition the objectives were:

1. Safety
2. South Summit
3. North Summit
4. Traverse- Up West Buttress down Muldrow

The following chart shows the planned itinerary and what actually happened.

Item	Planned Time	Actual Time
Travel to Alaska via Alcan Hwy.	4 days	5 days
Arrive in Talkeetna, Alaska.	1 day	1 day
Flown onto Kahiltna Glacier.	1 - 3 days	1 day
Kahiltna Pass (10200 feet).	4 - 6 days	3 days
Rest day.	1 - 2 days	0 days
Windy Corner (12700 feet).	3 - 5 days	3 days
Camp in 14000 foot basin.	2 -3 days	3 days
Rest day.	1 - 2 days	1 day
Camp at 16,300 feet.	2 - 3 days	4 days
Camp at Crows Nest 17,200 feet.	2 - 3 days	2 days
Rest day	1 - 2 days	1 day

Item (cont.)	Planned Time	Actual Time
Camp at Denali Pass	2 - 3 days	2 days
South Summit	1 - 3 days	1 day
Rest day	1 - 2 days	1 day
North Summit	1 day	1 day
Descent to Tundra	2 - 3 days	3 days
Out to Park Road	1 - 2 days	3 days
Drive back to Washington	4 - 6 days	1 day - (flew)

As can be seen what is planned and what takes place can be two different things. When planning a schedule take into account:

1. Bad weather
2. Rest days - many groups, including ours, experience the third day syndrome where everything on the third day seems to go to hell.
3. Reasonable pace. We tried to limit our climbing to not more than 500 - 1000 feet vertical per day above 14000 feet.
4. Climbing high, sleeping low - was one of our techniques for avoiding H.A.P.E.

While doing our expedition research we employed several resources. These consisted of:

*1. Personal experience - One of us had climbed McKinley before.
2. The National Park Service supplied us with information concerning regulations and our route.
3. Mountaineering Club of Alaska, Box 2037, Anchorage, Alaska, provided route information.
*4. Bradford Washburn, Museum of Science, Boston - Aerial photgraphs and route information.

*5. Mountaineering, Mount McKinley National Park, Booklet put out by the National Park Service.

*6. Mount McKinley Climber's Guide, Alaska Alpine Co.

7. Exploring Mount McKinley National Park, Richard Montague, Alaska Travel Publications, 1973.

8. Minus 148 degrees, Art Davidson, Art Craft Press.

*9. Mount McKinley, History and Evaluation, Bradford Washburn

10. Denali Environmental Project (DAEP).

* Indicates a resource that proved exceptionally helpful.

The idea is to get as much information concerning your proposed expedition as possible, especially first hand accounts.

As an example of how prior knowledge can affect your expedition, we knew from Washburn's Mount McKinley, History and Evaluation, the weather would usually clear at night and cloud back up in mid morning. Hence, this phenomenon could be used to our advantage - climbing in early morning and being in camp during the wet, snowy afternoon. The predictable afternoon thunderstorm in the Rockies is a similar phenomenon that can be useful in determining expedition strategy.

To summarize, when evolving your expedition strategy, get as much input and information as possible. Appoint research jobs for expedition members. Take advantage of any aerial, pictorial, or topographical maps available. Seek out people who have been there for a realistic picture of what to expect. Strive to reduce the number of unknowns and surprizes by asking, writing, calling, or visiting.

ODDS AND ENDS

In formulating expedition plans another category is the odds and ends. By odds and ends we mean such items as:

1. Finances
2. Applications/reservations
3. Passports
4. Immunizations
5. Repair Kits

Find out who administers the area (Federal, State, Provincial, etc.) and get their application procedures. On McKinley, this involves writing the Park Headquarters and getting an application and a Physician's Certificate to fill out. Many areas operate under a first come, first serve basis, so get those applications in early.

Reservations may or may not be needed. If they are, determine from where and whom. Get a confirmation letter, to avoid on the scene mistakes. We knew that June would be a busy flying month for our bushpilot, Cliff Hudson, so we made reservations in September of 1976. To confirm our reservation we had to make a 25 % deposit ($100.00).

If your expedition involves a foreign country additional procedures need to be considered. Some of these include:

1. Entrance and exit procedures. Even going through Canada can be a hassle. A word to the wise - have evidence of financial responsibility such as cash, credit cards, or traveler's checks, since many countries do not wish to import future beggars.

2. What immunizations are needed and make sure everyone gets them.
3. Passports - Are they needed, check with your local Post Office.
4. Currency exchange rates, foreign customs, prices, and availability of fuel, food, and water.
5. Check for the possibility of tacked on hidden costs, like tipping the taxi driver or losing your pack during transportation.

Other odds and ends include things like:

1. Getting everyone's normal vital signs (blood pressure, respiration, and temperature), as well as blood type.
2. We found it useful to make up a packet of information for each member consisting of maps, pictures, equipment/clothing lists, readings, etc. This tended to keep everyone informed and up to date as well as providing vital information.
3. Determining who pays for what. This is especially true if an individual's equipment is being used as group items. We made a point blank rule - any equipment damaged during a group function is replaced by the group.

If a car is used by the group, wear and tear should be accounted for. If you are rotating buying gas one way of achieving equality is to have the owner buy less gas due to the expense of his personal car being used. Also include some system for deciding who pays the repair bill. In all situations, having an expedition fund to draw from seems to be the easiest,

most effective way of paying bills.

As the expedition planner, make sure you WRITE IT DOWN. Record who was contacted, what was done, what still needs to be done, and where the money is coming and going. After the trip is not always the best time to determine if everyone paid their fair share. In other words, keep an expedition record.

COLLECTION AND PACKING

As the expedition takes form, equipment clothing, parts, food, and countless other items will be wanting a place to reside. We found that having a central point from which all the food and group equipment was stored proved handy and efficient. With this system, the expedition organizer can keep track of what is on hand, and what needs to be acquired. At this point, the checklist is handy to keep ahead of the proverbial eightball. We found a format similar to the one shown, effective and time-saving. Using a checlist helped us keep the logistics of our expedition managable. It also helped point out problems or areas we had not given much thought to.

Things To Do	By (date)	Check if Done	Comments
Immunizations	5/23/77	✓	—
Extra crampon straps	5/26/77	✓	check to see they fit all crampons.

Packing in order of use seemed to be a time - saving way of where to put what. We packed our food in nylon duffel bags, which meant good laveling or a lot of looking since nylon duffel bags look alike. The point being, put some thought into your packing scheme. What items will you use often,

first, up high, or on the return trip. As an example since our expedition involved a traverse, raingear was needed for the trek across the tundra, but nowhere else, hence, it was packed deep, available when we needed it, but out of the way when not used.

Another consideration is keeping the food and fuel seperate. If at all possible purchase fuel at the location and avoid having to transport. With the vibration and handling, fuel cannisters can leak. Unfortunately, if your food is anywhere near, you will be supercharged the rest of the trip but it does not do much for your appetite. Even plastic bags do not help since the fuel seems to diffuse through the plastic itself.

As the food and equipment begin to come in, you will have a real opportunity to raise group morale. Remember, people have often worked long, hard, and made quite a committment. Seeing real progress and preparations being made can really help offset the fatigue and low spirits. We found a bi-weekly meeting helpful, to keep everyone up to date and excited. The secret being to communicate and get people involved.

When the expedition material arrives at base camp unpack it and check. Any repairs or changes should be made at this time. It may be helpful to let everyone know where and what everything is. Time should be devoted to discussing things like tent partners, cook teams, dishwashers, environmental considerations, and all those other thousand and one things that need to be settled. We found this well worth the time spent, since more important things need to be determined while on the expedition, than who is going to cook the Top Ramen.

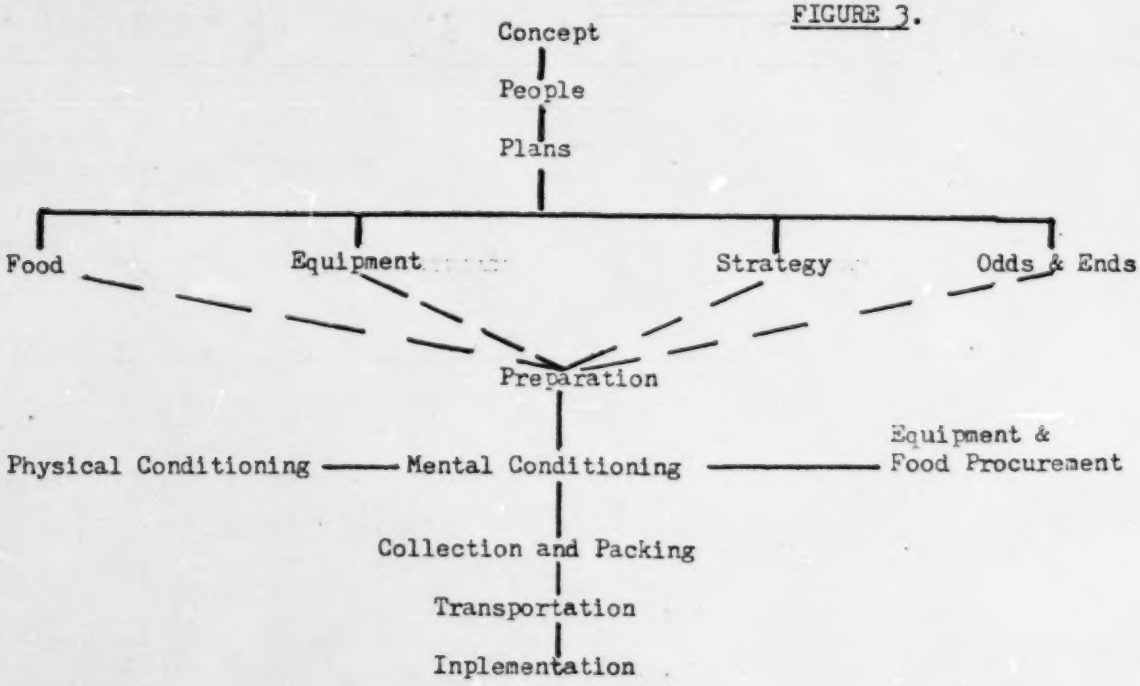
In summary, some factors in expedition planning which proved important

were:

1. COMMUNICATION - With all expedition members.
2. WRITE IT DOWN - Keep checklists and accurate records on what has been spent or done.
3. GROUP INPUT - Seek and use it. Give everyone a chance to participate and get involved.
4. ENTHUSIASM - Use it to get over the low points or when the task of collecting, organizing, and packed appear overwhelming.
5. TIME - Give yourself plenty of time to adequately plan and prpare for an expedition.
6. ORGANISE - Think through your expedition, its problems as well as strengths. Get as organized as possible - it will pay off later.

To help the expedition planner begin the ominous battle of organising, the following diagram shows a flow chart, depicting major areas of planning considerations.

FIGURE 3.



The time will come when all the planning or lack of it will produce results. The success or failure of an expedition will be dependent upon other factors besides prior planning, but for the expedition members to downgrade its importance is inviting failure or disaster. Hopefully this report will aid you, the expedition planner, in putting together a successful trip.

Suggested Reading for Expedition Planning

1. American Alpine Journal - Various issues depending on location.
2. The Field Book of Mountaineering and Rock Climbing, Tom Lyman, Winchester Press, 1975.
3. Mountaineering: Freedom of the Hills, second and third editions, 1967, 1974.
4. Exploring Mount McKinley National Park, Richard Montague, Alaska Travel Publications, Inc., 1973.
5. N.O.L.S. Cookery, Nancy Pallister, Emporia State Press, 1976.
6. The Wilderness Handbook, Paul Petzoldt, W.W. Norton and Company, Inc., 1974.
7. Movin' On, Equipment and Techniques for Winter Hikers, Harry Roberts, Stone Wall Press, Inc., 1977.
8. The Climbers Sourcebook, Anne and Steven Schneider, Anchor Press, 1976.
9. The Mountaineer, "The Changing Expedition Game", Willie Unsoeld, The Mountaineers, 1977.

ENDNOTES

[1]Nancy Pallister, ed., N.O.L.S. Cookery, (Teachers College Press, Kansas State Teachers College, Kansas, 1974).

GROUP EQUIPMENT LIST - MCKINLEY EXPEDITION JUNE 1977 B

Al Ewert Leader Max. Weight

___1. Tents - McKinley from R.E.I. - min. 2 (½ men.) _____ _____
___2. Stove - Primus 111B - with extra parts & accesories _____ _____
___3. Stove - MSR 9A - & accesories - (Flask) _____ _____
___4. Fuel - 4 gallons _____ _____
___5. Funnel - Coleman with felt insert. _____ _____
___6. Candle lantern - 1/tent _____ _____
___7. Extra Flashlight & Bulbs & Batteries _____ _____
___8. Snow shovels - MSR or similar (2) _____ _____
___9. Snow shovels - G.I. folding (2) _____ _____
___10. Snow saw - G.I. or other _____ _____
___11. Maps - Guide & Route information _____ _____
___12. Radio - Rented or 5 Watt Dyna-Com (AM-FM-Weather) _____ _____
___13. Wands ? (150) _____ _____
___14. Food Bags _____ _____ _____
___15. Flares, extra Crampon parts, harness parts, candles (2) _____ _____
___16. Air mattress _____ _____
___17. Pot Scrubbers (2) _____ _____
___18. Small Sharpening Stone _____ _____
___19. Pliers - needle nose with cutters _____ _____
___20. Boot Repair kit. _____ _____
___21. Nylon Repair kit. _____ _____
___22. Extra laces _____ _____
___23. Spatula. (2) _____ _____
___24. Extra Cup _____ _____
___25. Folding Bucket - (1/tent) _____ _____
___26. Camera & accesories (film) _____ _____
___27. Altimeter _____ _____
___28. Spotting Scope (?) - NGI. _____ _____
___29. Insect Repellent. _____ _____
___30. Crampon Strap. _____ _____
___31. Ropes _____ _____
___32. Whisk broom (1/tent) _____ _____
___33. Sponge (1/Tent) _____ _____
___34. Extra pair of Crampons. (?) _____ _____
___35. Extra ice axe _____ _____
___36. Extra cinching straps _____ _____
___37. Tent Games _____ _____
___38. Garbage Bags _____ _____
___39. Body warmer. (?) - Pellets _____ _____
___40. First aid kit _____ _____
___41. Emergency kit _____ _____
___42. Repair kit _____ _____
___43. Sleds _____ _____
___44.
___45.

Repair Kit

___1. Nylon Repair tape (2 packets)
___2. Pack Pins
___3. Small screws & nuts (4)
___4. Needles
___5. Patches
___6. Safety Pins (8 large)
___7. Buttons (4) - (Med).
___8.
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INDIVIDUAL EQUIPMENT LIST - MCKINLEY EXPEDITION - JUNE 1977 C

Alan Ewert, Leader

		Max. Weight
___ 1.	Pack with full frame. Approved (Jansport Dhaulgiris, Kelty Serac, etc.)	
___ 2.	Sleeping Bag (-20°F) - 2½ lbs down minimum. Reccommend - 1 down 1 fiberfill	
___ 3.	Ensolite Pad - (Green Best) Large enough to allow for movement.	
___ 4.	Parka, Down - Similar to or superior to R.E.I. Cascade	
___ 5.	Parka, Rain - Large and Long.	
___ 6.	Parka, Wind - 60/40 or similar	
___ 7.	Sweater or shirt, wool - 2 light or one heavy	
___ 8.	Pants, down or fiberfill expedition type.	
___ 9.	Pants, wool - heavy - G.I type or similar	
___ 10.	Pants, rain - wind	
___ 11.	Gauntlets, down or military with wool inserts.	
___ 12.	Extra inserts for 11.	
___ 13.	Mittens, leather with wool inserts (treated with snowseal)	
___ 14.	Gloves, wool - as inserts for 12 & 13 or for wear by selves	
___ 15.	Hat, wool with face mask (Balvaclava).	
___ 16.	Hat, with bill or rim.	
___ 17.	Boots, GI. Korean inflateable style	
___ 18.	Boots, expedition overboot. (For around camp. et al)	
___ 19.	Booties, down or polar guard	
___ 20.	Socks, wool - 5 PR minimum.	
___ 21.	Socks, nylon - 2 PR. (For wick-ing action)	
___ 22.	Underwear - as required - thermal, fishnet etc	
___ 23.	Gaiters - Long with top drawstring	
___ 24.	Belt, Strong and comfortable	
___ 25.	Helmet, approved by a leader	
___ 26.	Crampons - 12 point	
___ 27.	Ice Axe - with glide ring and tie off loop	
___ 28.	Goggles or sunglasses with side protection (2pair)	
___ 29.	Water container, one plastic, one metal prefered	
___ 30.	Flashlight	
___ 31.	Watch (with second hand)	
___ 32.	Compass - Wilkie Brass Acceptable	
___ 33.	Map - as provided	
___ 34.	Cup, Pot with snug lid, silverware	
___ 35.	Three plumbers candles with matches or lighter	
___ 36.	Paper towels - 5 sheets/day minimum (200 sheets)	
___ 37.	Notebook (Journal) and pencils	
___ 38.	10 extra plastic bags for packing	
___ 39.	Rubber bands 8 extra heavy	
___ 40.	Avalanche cord - interval and direction marked	
___ 41.	Ascenders or 2 - 10'x¼" nylon slings	
___ 42.	Harness - approved by a leader	
___ 43.	Pulley	
___ 44.	Carabiners - (at least 1 locking) - 3 Total	
___ 45.	Snow Shoes - Alaskan (Maine, Michigan etall Trail	
___ 46.	Ski Poles	
___ 47.	Knife - Multi - Functional	
___ 48.	Plastic drop cloth (9'x12' or two large garbage bags	
___ 49.	Personal first aid kit: 10 bandaids, 25' adhesive tape, sunscreen - of your choice, 2 razor blades, moleskin, 2 bullion cubes, 1 book of matches, 2 small safety pins.	
___ 50.	Personal survival kit: Extra knife (small), small hank of wire, 12"x36" sheet of aluminum foil, 50' duo-filament fishing line, emergency fire starter, 2 sail needles, small signal mirror, 8 iodine tablets, 5 salt tablets or equivelent, 2 large safety pins, 1 extra razor blade, extra small compass optional	

Some Optional Items

- ____ Down socks
- ____ Nylon wind parka or pants
- ____ Cotton shirt
- ____ Scarf
- ____ Extra Eating Bowl
- ____ Paper Backs - 2+
- ____ Toilet Articles
- ____ Vest, down or wool
- ____ Tent shoes
- ____ Hand Towel
- ____ Whistle (small and shrill)
- ____ Personal medicine - Leader approval
- ____ Spare parts particular to <u>your</u> gear
- ____ Poncho